A1 Com

number of biological effects, including damages to proteins, nucleic acids, lipids, and other cellular components, and often ultimately results in cell death.

Please replace the paragraph on page 2, line 1-12 with the following paragraph:

PDT drugs may be administered to a patient by ingestion or injection or by applying the compound to a specific treatment site on the patient's body. These compounds characteristically accumulate at higher concentrations in rapidly-growing tissue, such as malignant tumors, than in normal tissue. Typically, after administering a PDT drug intravenously and then waiting a period of time, the drug clears from normal tissues and is preferentially retained by rapidly-growing tissues. The drug remains inactive until exposed to light. Application of light of a suitable wavelength photoactivates the drug, resulting in generation of reactive species and damage to neighboring tissue. PDT has been used to treat various types of malignant tumors as well as non-cancerous conditions such as macular degeneration and atherosclerosis.

A2

Please replace the paragraph on page 2, lines 13-29, with the following paragraph:

Light sources utilized for PDT include monochromatic lasers linked to fiber optics and light emitting diode (LED) arrays. One disadvantage of such light sources is that they are not capable of broadband emission at multiple wavelengths or wavebands at which a drug can be activated. Often a PDT drug can be activated at more than one wavelength. To obtain light of multiple wavelengths, light from multiple lasers and/or from multiple LEDs must be coupled into a fiber optic. Lasers can be bulky, requiring in-office or in-hospital administration of light and requiring a significant amount of valuable space to house the multiple lasers. Further LEDs may not provide all wavelengths desired. The technology to provide LEDs producing blue, violet, and ultraviolet light is developing, but LEDs are not yet available to provide the full spectrum of specific wavelengths that can be useful to activate PDT drugs. Further, light in a waveband from the blue to ultraviolet part of the spectrum does not penetrate

A3

A3 cont.

tissue very deeply. Consequently, any light administered via laser or LED array in this portion of the spectrum only penetrates shallow portions of tissue at the site where light is introduced to the body.

Please replace the paragraph on page 3, lines 12-20, with the following paragraph:

The invention in one embodiment provides a photodynamic therapy in which light-emitting nanoparticles are administered to a patient in addition to a PDT drug in order to activate the drug. The light-emitting nanoparticles absorb light from the light source and re-emit light at a different wavelength, one which is suitable to activate the PDT drug in the vicinity of the light emitting nanoparticles. The PDT drug near the light-emitting nanoparticles is activated, thus treating the disease any place that the PDT drug and nanoparticles are located and that light from the light source can reach.

A4

Please replace the paragraph on page 9, lines 6-12, with the following paragraph:

Quantum dots are small molecular clusters having up to about a few hundred atoms. Quantum dots are therefore larger than individual atoms, but quantum dots generally behave in accord with the principles of quantum mechanics that govern the behavior of individual atoms. Because of this behavior, quantum dots are sometimes also called "artificial atoms." Quantum dots have a size in the region of about 1 nm to about 20 nm and are typically only a few nanometers in size.

A5

Please replace the paragraph on page 9, lines 13-27, with the following paragraph:

A quantum dot is typically composed of a semiconductor material or materials, metal(s), or metal oxides exhibiting a certain bandgap energy. Although it is preferred that biocompatible light-emitting nanoparticles such as TiO_2 are used in the practice of the invention, nanoparticles that are not generally considered to be biocompatible may also be used. A variety of materials may be utilized for construction of nanoparticles, including but not

A6

limited to TiO_2, Al_2O_3, AgBr, CdSe, CdS, CdS_xSe_{1-x}, CuCl, $CdTe_xS_{1-x}$, ZnTe, ZnSe, ZnS, GaN, InGaN, InP, CdS/HgS/CdS, and InAs/GaAs. Group II-VI, Groups III-V, and Groups I-VII semiconductors as well as Group IV metals and alloys from quantum dots and other nanoparticles as described below when formed sufficiently small. A quantum dot may also be surrounded by a material or materials having wider bandgap energies (for example, ZnS-capped CdS), and especially may be surrounded by those materials that improve biocompatibility of the nanoparticles.

A6 cont

Please replace the paragraph on page 33, line 18, through the paragraph on page 34, line 2, with the following paragraph:

The activating light source emits light that the nanoparticles absorb. Consequently, if all the nanoparticles absorb light at about the same wavelength, a narrow-band light source such as a laser can be used. Or, if the nanoparticles absorb light at different wavelengths, a broader-band light source may be used such an LED array. Light-emitting nanoparticles may themselves be a light source for other light-emitting nanoparticles as described previously in order to allow a light source to be used that produces light of a wavelength that is absorbed by some of the nanoparticles but not all of them. In this case, the nanoparticles acting as a light source for other nanoparticles absorb the actinic radiation from the light source, then emit radiation at a second wavelength that at least some of the other nanoparticles absorb, causing them to fluoresce. In another preferred embodiment of the invention, a narrow-band light source such as a laser is used to activate a mixture of nanoparticles whose emission provides a broad band of light.

A7

IN CLAIMS:

Please cancel claims 125-130. Please amend claims 15, 68, 131 and 134 and add new claims 137-143 as follows (a marked-up copy of the amended claims is attached to this Amendment):

15. (Amended) A method according to claim 14, wherein the photosensitive compound is selected from the group consisting of indocyanine

A8